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A New *Parapodisma* Species (Orthoptera, Catantopidae)
from Kyushu, Japan

With 14 Text-figures

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ABSTRACT A new species of the genus *Parapodisma* is described and illustrated from Mt. Hiko-san, northern Kyushu, Japan, under the name of *yasumatsui*. This new species is characterized mainly by the male genital parts, *e.g.*, subgenital plate protruding postero-dorsally and with subacute apex, not compressed cerci, and epiphallus of peculiar shape.

Mt. Hiko-san (1,199.6 m in height) is a mountain lying in northern Kyushu, Japan. It is not much elevated but is well known to entomologists because of the richness of endemic insect species. *Anoplophilus esakii* Furukawa is a good example of such endemism found in Orthoptera.

During my stay on Mt. Hiko-san made in the summer of 1978 and in the autumn of 1979, I collected a fairly long series of grasshoppers belonging to a species of the genus *Parapodisma*. A close investigation of this grasshopper revealed it to be new to science. In the following pages, a description and illustrations of this new species will be given. Only the material taken in 1979 was used for preparing the description.

Parapodisma yasumatsui n. sp.

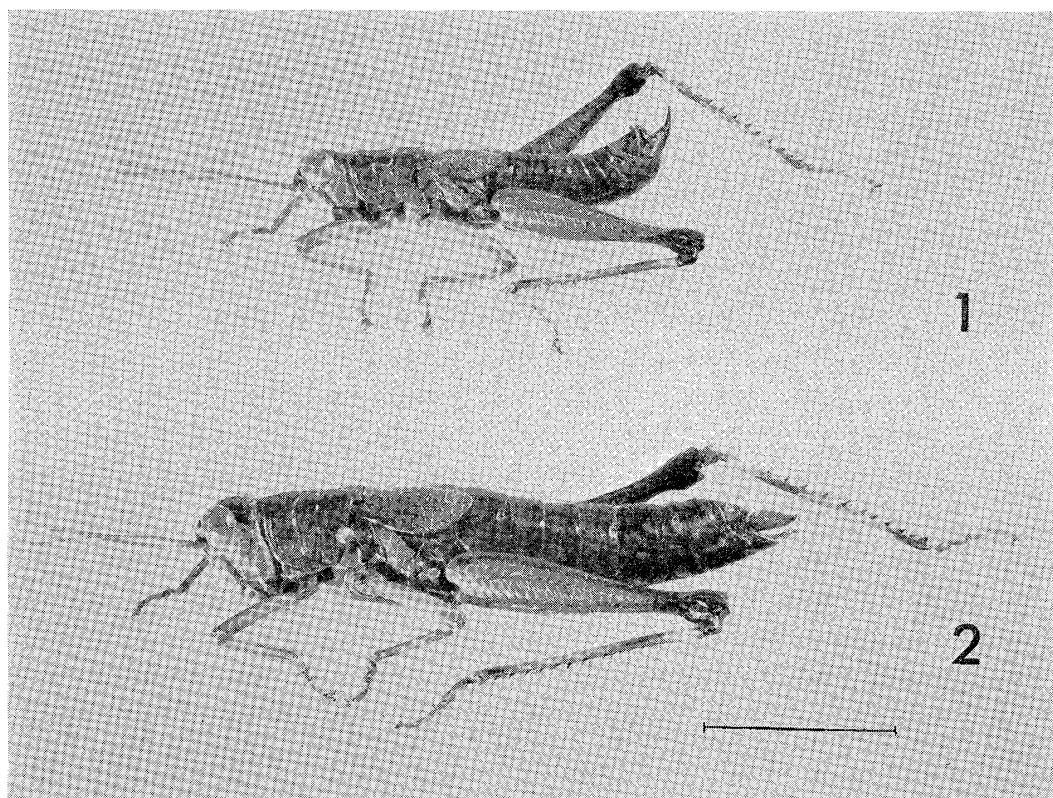
[Japanese name: Onaga-fukibatta]

(Figs. 1-14)

Unique in the shape of male subgenital plate which protrudes postero-dorsally and is acute conical in the apical part.

Male. Body as shown in Fig. 1, of medium size, 22.8 mm in its mean length, and bright green.

Head short; face obliquely receding; frontal carinae subparallel, but narrowing at the level of transverse ridges just below median ocellus, area between these ridges shallowly fossulate; median ocellus not so large. Fastigium of vertex slightly



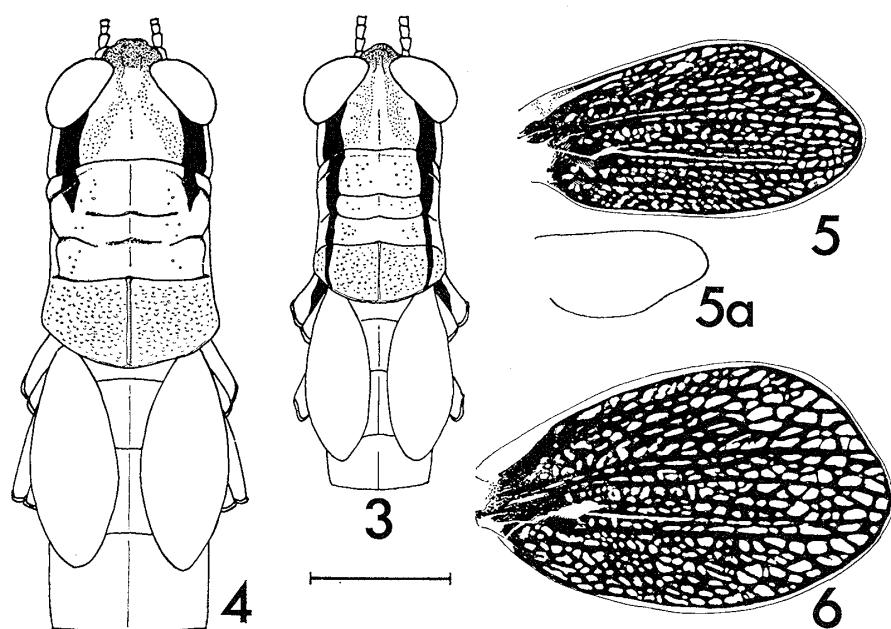
Figs. 1-2. *Parapodisma yasumatsui* Yamasaki, sp. nov., of Mt. Hiko-san, in profile. — 1, Male, holotype; 2, female, paratype (allotype). Scale shows 10 mm.

depressed. Eyes large, globose, short oval in profile, slightly narrower than high. Antennae elongate, reaching the first abdominal tergite, about 9.3 to 11.6 mm in length, filiform, composed of 23 articles.

Pronotum as shown in Fig. 3, with three transverse sulci on dorsum; anterior margin weakly incised at the median part; prozona very sparsely and weakly punctate, its median carina obscure; metazona densely punctate, with a median carina; posterior margin rounded, produced posteriorly; lateral lobe with three deep sulci composed of submarginal, second and third transverse ones; lateral carinae absent, their sites being slightly concave at both ends of the first transverse sulcus.

Prosternal process conical, pointed at apex. Mesosternal lobes as long as width, round medially in internal margins; minimum width in mesosternal interspace about 0.6 times as wide as the maximum width between the external margins of lobes. Metasternum wide; metasternal interspace narrower, about a half as wide as mesosternal interspace.

Elytra as shown in Fig. 5, short and oval, the greatest width at apical one-third, reaching posterior one-third of the second abdominal tergite or sometimes reaching the anterior margin of the third abdominal tergite, and not overlapping each other on the dorsal surface of abdomen. Wings reduced to a half the elytral length and with degenerated neuration.



Figs. 3-6. *Parapodisma yasumatsui* Yamasaki, sp. nov. — 3, Anterior half of body, from above, male; 4, same, female; 5, male right elytron; 5 a, male right wing; 6, female right elytron. Scale shows 4 mm in Figs. 3 and 4, and 2 mm in Figs. 5 and 6.

Hind femora slender, 5.3 times as long as maximum width which is at the level of Brunner's organ. Hind tibiae, on dorsal side, with 9 to 13 spines on the external margin and 11 to 13 on the internal one.

Last abdominal tergite interrupted, without furcae.

Supra-anal plate as shown in Fig. 8, as a whole triangular with its median length approximately equal to its proximal width; medio-longitudinal sulcus distinct but shallow proximad, its margins obliquely convergent to two-fifths the median length, its distal part subparallel and apical part obscure; each lateral submargin with a nodule at proximal one-fourth. Cerci as shown in Figs. 7 to 9, elongate, strongly incurved, slender in apical two-fifths, but not compressed; apex obtuse. Subgenital plate as shown in Fig. 7, protruding postero-dorsally, subconical with subacute apex, which curves upward in many cases but rarely protrudes posteriorly as shown in Fig. 7a. Epiphallus as shown in Fig. 10, narrowly bridged, with incurved ancorae and lobiform lophi. Penis as shown in Fig. 11.

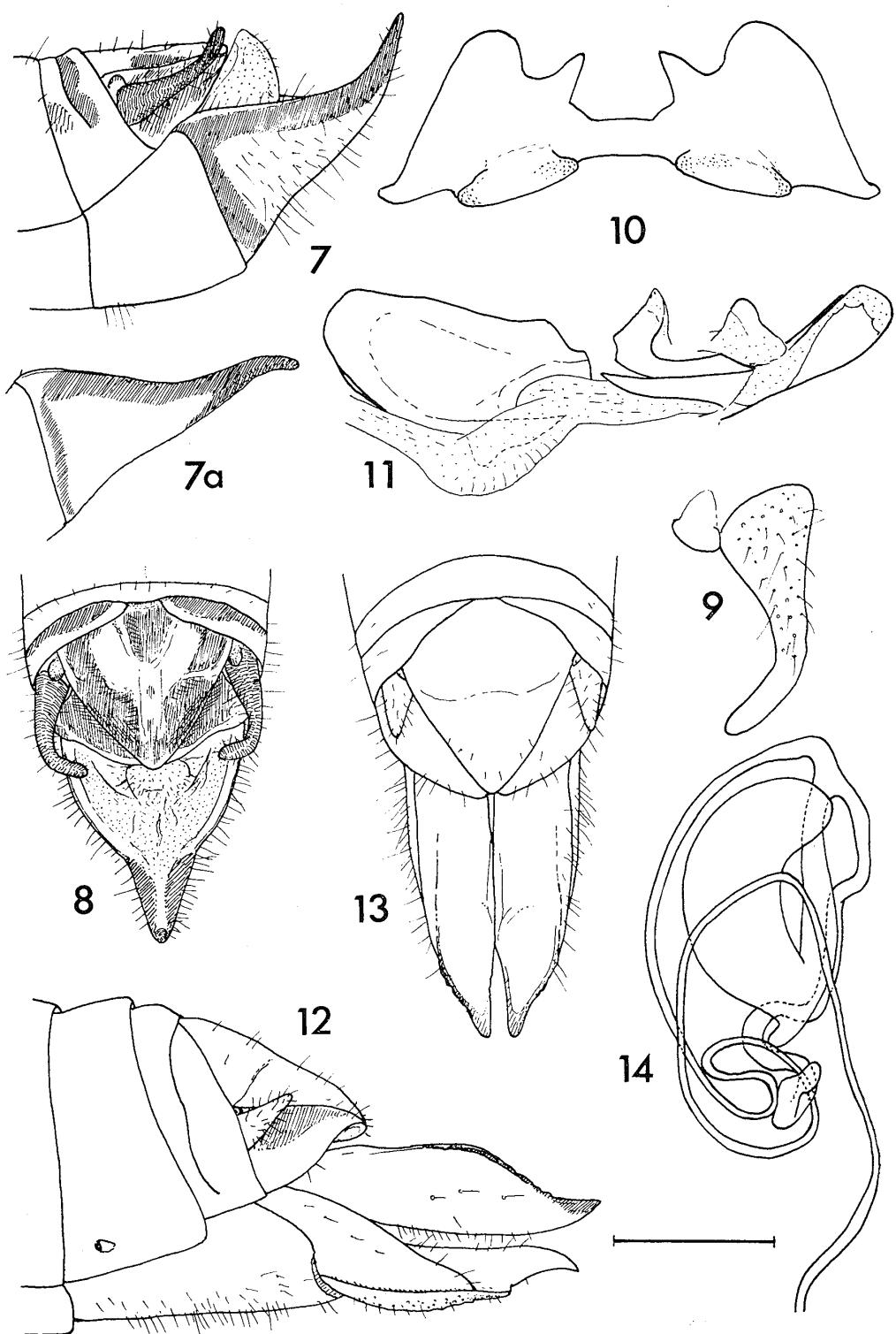
Female. Body as shown in Fig. 2, larger than in male, 30.3 mm in its mean length.

Eyes long oval, narrower than high. Antennae shorter than in male in pro-

Figs. 7-14. *Parapodisma yasumatsui* Yamasaki, sp. nov. — 7, Male abdominal end, in profile; 7 a, another example of male subgenital plate, in profile; 8, male abdominal end, from above; 9, male right cercus and basipodial plate, from above; 10, epiphallus, from above; 11, penis, in profile; 12, female abdominal end, in profile; 13, same, from above; 14, spermatheca. Scale shows 2 mm in Figs. 7, 8, 12 and 13, and 1 mm in Figs. 9-11.

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portion to the body length.

Pronotum as shown in Fig. 4, slightly and gradually widened posteriorly in metazona; the first and second sulci frequently becoming obscure on both sides of the median part.

Prosternal process short and thick. Both mesosternal and metasternal inter-spaces wider than those of male.

Elytra as shown in Fig. 6, short and oval as in male, but broader; its greatest width at apical two-fifths, reaching about a half of the second abdominal tergite. Wings not reaching the posterior margin of the first abdominal tergite.

Hind femora 4.8 times as long as maximum width which is at the level of Brunner's organ. Hind tibiae, on dorsal side, with 9 to 14 spines on the external margin and 10 to 14 on the internal one.

Supra-anal plate as shown in Fig. 13, nearly triangular, with a longitudinal median fossula at basal half and a slightly arcuate transverse impression at the middle which forms the posterior margin of the tenth abdominal tergite. Cerci as shown in Figs. 12 and 13, short conical. Subgenital plate as shown in Fig. 12, with a pair of slightly salient angle at the middle on both sides of the posterior margin. Ovipositor as shown in Fig. 12, its serration along external dorsal edge being slight. Spermatheca as shown in Fig. 14; small sac growing from basal part of main sac sometimes reduced.

Coloration. Green, sometimes bright or yellowish green, but black in such parts as fastigium of vertex, areas behind eyes, whole of male pronotal edges (anterior part only in female), epimera of mesothorax, spines of hind tibiae, part of the tenth abdominal tergite, supra-anal plate, part of paraproct and subgenital plate, and male cerci. Hind femora pale pink on the under surface. Hind tibiae with pale genicular ring in basal part.

Measurements (in mm). Body length, ♂ 20.0–22.5 (20.0 in holotype), ♀ 28.5–33.5; head width (including eyes), ♂ 3.9–4.2 (3.9), ♀ 4.4–5.0; pronotal length, ♂ 4.2–4.9 (4.4), ♀ 5.5–7.9; elytral length, ♂ 4.9–6.4 (5.0), ♀ 5.8–7.4; hind femoral length, ♂ 11.2–12.7 (11.2), ♀ 13.7–16.5.

Type-series. Holotype: ♂, top of Mt. Hiko-san (1,199.6 m alt.), northern Kyushu, Japan, 15-x-1979, T. Yamasaki leg. Paratypes (including allotype): 11 ♂♂ 12 ♀♀, same data as the holotype; 3 ♂♂ 4 ♀♀, northwestern slope (900 m alt.) of Mt. Hiko-san.

The type material is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, and paratypes are preserved in my collection for study.

Type-locality. Mt. Hiko-san, northern Kyushu, Japan.

Range. Known so far only from Mt. Hiko-san, northern Kyushu.

Notes. Recently, Inoue (1979) described two species of *Parapodisma*, *setouchiensis* and *niihamensis*, from Shikoku and the Chūgoku District, southwestern Japan. Both the species are not related to the present new species, though they inhabit neighbouring areas of northern Kyushu. As described before, *P. yasumatsui* is

much isolated in the shape of its male subgenital plate. It may have become differentiated under the isolated condition of Mt. Hiko-san and may support the zoogeographical importance of the mountain.

The specific name of the new species is dedicated to Professor Emeritus Keizo Yasumatsu who was the former director of the Hikosan Biological Laboratory of Kyushu University and brought it up to the present state, in commemoration of his long research career devoted to agricultural entomology.

ACKNOWLEDGEMENT

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REFERENCE

Inoue, M., 1979. Two new species of the genus *Parapodisma* from western Japan (Orthoptera: Acrididae). *Proc. Jap. Soc. syst. Zool.*, (16): 58-64, 1 pl.